Dr. Wood made some remarks upon the appearance of that mountain on a visit he made shortly after an eruption.

The Society proceeded to ballot for candidates for membership.

Dr. Coates reported verbally that he performed the duty assigned to him, at the last meeting.

All other business having been concluded, the ballot-box was opened, and the following named gentlemen were declared to be elected members of this Society:

Dr. Edward Rhoads, of Philadelphia.
Gen. Ulysses S. Grant, U. S. Army.
Prof. John Tyndall, of London, Eng.

And the Society was adjourned.

Stated Meeting, May 1, 1868.

Present, nineteen members.

Dr. Wood, President, in the Chair.

Letters were read: from General U. S. Grant, dated Washington, April 21st, 1868, and from Dr. Edward Rhoads, dated Philadelphia, April 21st, 1868, both acknowledging the receipt of the notice of their election as members of this Society.

From S. S. Boyce, New York, April 18th, 1868, on behalf of the Editors of the "American Athenæum," requesting to be furnished with the names of the scientific and literary associations of the country, and the names of the corresponding secretaries of such associations. Also from the Royal Society at Göttingen, January, 1868, announcing a donation, and returning thanks for Nos. 75 and 76 of the Proceedings.

Donations for the Library were announced as follows; From Societies: The Royal, of Sciences, at Göttingen; from the Royal Geological, at Vienna; from the Royal Astronomical, of London; from the Royal Microscopical, of London; from the Royal Meteorological, of London; from W. K.

Bowling, M.D., of the University of Nashville, Tennessee; from the Editors of the American Athenæum; from George W. Hewes, of Philadelphia; from J. P. Lesley, and the Franklin Institute.

The death of W. C. Rives, of Virginia, a member of the Society, was announced as having occurred at Charlottesville, 25th April, 1868, aged seventy-five years.

General Kane exhibited a map of the Northern Circumpolar Regions, and made some remarks upon the unexplored portions of the same, and their relations to the adjacent countries in a political and national point of view. In connection with the subject, he showed the importance of Alaska as a possession of the United States. He advanced the opinion that the most successful explorations northward will hereafter be made from that quarter, as offering a more promising field for the acquisition of scientific and practical knowledge, than the routes heretofore adopted by explorers.

Mr. Marsh read parts of the following letter from Mr. Vail, dated Rome, April 1st, 1868, received since his communication at the last meeting, describing the progress of the eruption of Vesuvius:

"In spite of the prophecies in regard to the end of the eruption, Vesuvius has continued more or less active up to the present time.

"Some days it would send up all day nothing but volumes of steam, and, on other days, dense clouds of smoke would now and then be belched up during the day, and when night came, bright flashes of light would be seen; and with a glass you could see a vast number of red-hot stones thrown up into the air.

"At my first ascent, made about two weeks since, I crossed over the top of the mountain at the foot of the great crater, which, though steaming like a huge boiler, was very quiet.

"My second ascent was on the 27th ultimo. I went up late in the day, in order to see the lava stream at night; reached the foot of a large one about five o'clock, and therefore had plenty of time to examine it before dark.

"This stream started near the top of the mountain, and

ceased to be fluid long before it reached the valley between Vesuvius and Soma, into which it was running. *But it did not therefore stop, but pushed itself along in a most singular way.*

"Imagine the side of a pile of coal or coke all on fire, with a front several hundred feet long, and twelve or fifteen feet high, moving forward about a hundred feet an hour, and you will have a pretty correct idea of its appearance.

"It was generally very much broken up, but sometimes red-hot masses, several feet in diameter, would roll out and down the steep front of the advancing pile, as if pushed by some irresistible power behind.

"After dark, the whole stream, more than half a mile in length, was very brilliant; and the crater threw up, every few seconds, a perfect shower of stones hundreds of feet into the air, looking like so many meteorites or Roman candles.

"The next day, in company with Pemberton Smith, I went again to the same place. The spot where we had tied our horses the evening before, was entirely covered with broken lava, but the stream had ceased to flow. The crater, however, was still active; and we could see, by the steam down the sides of the mountain, that other streams had broken out.

"The climb up the 'Great Cone,' which is very much like the steep side of a pile of coke and ashes, and which, when you take a step, often gives way and slides down with you, is exceedingly laborious.

"The wind, too, blew a gale, bringing with it, as we neared the top, volumes of smoke from the flowing streams of lava to our left. We saw snow among the stones, and the wind was icy cold, so that I wore my overcoat all the time, and the guide carried a rug for me to wrap up in when I reached the summit. But I had no use for it there, having come near enough to the flowing lava to quite change the temperature.

"When some hundred yards from the base of the crater, we stopped and sat down to watch the way in which the stones were thrown up into the air.

"It seemed as though the whole mountain was convulsed by a fit of coughing, half strangled by something in its throat, or, as we remarked at the time, 'had the heaves.'

"The coughs came sometimes in quick succession, ten or twenty in a minute. At other times the intervals were from half a minute to a minute.

"At each convulsion the sides of the mountain shook, smoke and ashes, and fragments of broken lava flew up in all directions from the mouth of the crater. Some of the stones were of immense size, and some were thrown to a vast height, sometimes disappearing in the air as a hawk does in soaring out of sight. I timed some of the larger ones, and found they were ten seconds in descending. They must have been thrown up at least a thousand feet. As Pemberton Smith had never seen liquid lava, our guide undertook to show us some.

"Following him through a dense cloud of smoke across a valley of awful roughness, like cast-iron ploughed by giants when it was wet, we reached a steep bank eight or ten feet high, and, by peeping over this when the wind lulled and the smoke rose, we could see just beyond it a huge stream of liquid fire running down the mountain in a torrent. But we could only get a glimpse of it, for, in addition to the smoke, the heat was terrific. I had no thermometer, but feel sure it could not have been much less than about 180°.

"In watching the stones thrown up from the crater, we saw one descend quite near us, and our guide ran and brought it to us while still hot. We each broke off a small piece and put in our pockets, and afterwards found that they had burned holes in the paper in which they were wrapped.

"We descended nearly parallel to the flowing lava in an old lava channel. It seemed like an inclined aqueduct, was half round, and very smoothly plastered at bottom, as though done with mortar.

"The flowing stream had not yet reached more than two-thirds the distance down the cone, but was so chilled at its lower end as to resemble tar or molasses in its progress. It had a long semi-cylindrical front, perhaps ten or twelve feet deep and some two hundred feet wide.

"Seeing an open, sandy place a quarter of a mile below it, well sheltered by banks of scoriæ twelve or fifteen feet high, we went there and seated ourselves, to rest and to watch the movement of the lava, and the red-hot stones, which constantly broke through the front and rolled down the side of the mountain, occasionally reaching the upper end of the valley some two or three hundred yards from us.

"I always did enjoy the sight of stones rolling down hill, but, to see them red-hot, and just at dusk, was magnificent. We

had been sitting only a few minutes, however, when we saw a huge boulder six feet in diameter issue from the lava. We all rushed, as by instinct, up the banks of scoriæ to get beyond its reach, and, turning, saw it come bounding through our sandy valley, and, just by where we had been setting, it struck a rock and threw off thousands of red-hot fragments that went bounding through the air like so many meteors.

"We made a very hasty retreat from our pleasant valley, not knowing what might be the next move.

"A walk of half a mile brought us where we could have a full view of four streams of burning lava. Three of these had divided into two each about half way down the cone, and two had reached the valley, and one or two others were nearly down.

"It was now dark, and the brilliant display of these, combined with the incessant shower of stones thrown up by the crater, which fell by thousands on the side of the mountain, and could be seen chasing each other down the declivity, cannot be described.

"I took a sketch of the position of the streams, and, on my return, Professor Phillips, of Oxford, seemed so much interested in our account, that I gave it to him.

"Our guide said there had been no such flow of lava before this year. His statement is not of much value, were it not confirmed by others."

New nomination 589 was read.

And the Society was adjourned.

Stated Meeting, May 15, 1868.

Present, nine members.

Professor CRESSON, Vice-President, in the Chair.

Donations for the Library were announced, viz.: from the Royal Academy, at Turin; From Professor Zantedeschi, at Venice; from the Geographical Society, at Paris; from M. Dunod, Editor of the Annals des Mines, Paris; from the